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Plenary
Agenda item 2 (b)
Working Group II
Agenda item 2

PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT ASSEMBLY RESOLUTIONS: RECENT ACTIONS OF INTERGOVERNMENTAL AND OTHER BODIES OF RELEVANCE TO THE PREPARATORY PROCESS

PROTECTION OF THE OCEANS AND ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

Note by the Secretary-General of the Conference

1. In paragraph 3 of its decision 3/21, the Preparatory Committee requested the Secretary-General of the Conference to submit to it at its fourth session, the report on the results of the intergovernmental meeting of experts on the degradation of the marine environment from land-based sources of pollution and activities in coastal areas to be convened by the United Nations Environment Programme and other relevant United Nations organizations. The meeting was held at Nairobi, 9-13 December 1991.

2. The Preparatory Committee invited the intergovernmental meeting of experts to consider the elements and policy considerations as included in the annex to decision 3/21, taking fully into account General Assembly resolution 44/228.

3. The report of the meeting is annexed to the present note. Particular attention should be given to appendix I of the report which makes recommendations relative to Programme Area B on marine environmental protection of the revised options for agenda 21 on oceans as contained in document A/CONF.151/PC/100/Add.21.

ANNEX

Report of the meeting of government designated experts to formulate a draft strategy for the reduction of the degradation of the marine environment from land-based sources of pollution and activities in coastal areas, held at Nairobi from 9 to 13 December 1991*

* Originally issued under the symbol UNEP(OCA)/WG.14/4. The annex is circulated in the languages of submission only.

I. INTRODUCTION

1. By its decision 16/26A, the Governing Council of the United Nations Environment Programme requested the Executive Director to convene a meeting of Government designated experts to formulate the draft strategy, including a targeted and costed programme of action, for reducing the degradation of the marine environment from land-based sources of pollution and activities in coastal areas, drawing on policy guidance from the third session of the Preparatory Conference for the United Nations Conference on Environment and Development (UNCED). It further requested that the outcome of that meeting should be reported through the Secretary-General of UNCED to the Preparatory Committee at its fourth session.

2. To that end, the Meeting had at its disposal the following documentation: the Strategy for the Reduction of the Degradation of the Marine Environment from Land-based Sources (UNEP(OCA)/WG.14/3 and Add.1); the report of an informal consultation of experts (UNEP(OCA)/WG.14/INF.3); the Montreal Guidelines (UNEP(OCA)/WG.14/INF.4), together with an analysis of the implementation of those Guidelines (UNEP(OCA)/WG.14/INF.5); operative paragraphs of selected decisions of the UNEP Governing Council and the UNCED Preparatory Committee (UNEP(OCA)/WG.14/INF.6); a summary of replies to the Executive Director's letter of July 1991 requesting information on Governments' plans for reducing the degradation of the marine environment caused by pollution from land-based sources (UNEP(OCA)/WG.14/INF.7); an account of two case-studies in the Mediterranean region (UNEP(OCA)/WG.14/INF.8, 9 and 10) and an UNCED Preparatory Committee document on the protection of the oceans, all kinds of seas including enclosed and semi-enclosed seas, coastal areas and the protection, rational use and development of their living resources (A/CONF.151/PC/WG.11/L.18).

II. OPENING OF THE MEETING

3. Mr. Evteev, Assistant Executive Director of UNEP, opened the Meeting. Having welcomed the participants on behalf of the Executive Director, he clarified the situation vis-à-vis Agenda 21, referring to decision 16/26A of the UNEP Governing Council. The Meeting was expected to draft a strategy and an action plan as a contribution to the UNCED preparatory process. It was not, of course, required to draft any actual part of Agenda 21, which was the responsibility of the UNCED secretariat. The report of the Meeting would be submitted to the Secretary General of UNCED by the Executive Director of UNEP. He wished the participants every success in their work.

III. ORGANIZATIONAL MATTERS

A. Election of Officers

4. The Meeting elected the following officers by acclamation:

Chairman:	Mr. N. Quinn (Australia)
Vice-Chairman:	Mr. H. Shihab (Maldives)
	Mr. T. Balkas (Turkey)
Rapporteur:	Mr. O. Linden (Sweden)

B. Rules of Procedure

5. The Chairman pointed out that, as mentioned in paragraph 7 of the Annotated Agenda (UNEP(OCA)/WG.14/2), the rules of procedure of the Governing Council of UNEP would apply, mutatis mutandis, to the Meeting.

C. Organization of Work

6. The Chairman said that the Meeting would work in Plenary session, holding two meetings a day. Ad hoc working groups - without interpretation - might be established as required.

D. Adoption of the Agenda

7. The title of agenda item 4 was amended to reflect the wording used by UNCED in its appropriate chapter of Agenda 21. The title of agenda item 5 was also amended, the words "Review of", being replaced by the words "Elements for". A proposal that agenda items 4 and 5 be merged into a single item was rejected. The provisional agenda as amended was then adopted. The agenda is to be found in Annex II to this report.

E. Attendance

8. The Meeting was attended by the representatives of 52 countries. It was also attended by observers from one country, 6 United Nations bodies, specialized agencies and other international organizations, and from two non-governmental organizations. The list of participants is to be found in Annex III to this report.

IV. SUBSTANTIVE MATTERS

A. UNCED update of agenda 21

9. Ms. Alicia Barcena, Principal Officer on Oceans from UNCED secretariat, described the preparatory process for the UNCED documentation and the ways in which the results of the current Meeting could be considered in that process. She suggested that the Meeting could produce both a concise document in a format suitable for integration into Agenda 21, and a full report with the appropriate background and supporting documentation.

10. Several representatives noted the importance of relating the work of the Meeting to the UNCED preparatory process with particular reference to consideration by the Preparatory Committee, at its fourth session.

Elements for the draft strategy

11. The Chairman said that the concordance prepared by the small technical working group would help the Meeting considerably in its work. He noted that the Agenda 21 format divided the subject into four sections: Basis for Action, Objectives, Activities and Means of Implementation. That format would be followed in the draft strategy, but the Meeting would use as its basic reference document the strategy prepared by the UNEP secretariat (UNEP(OCA)/WG.14/3 and Add.1), grouping the elements it approved in the UNCED structure.

12. After a lengthy discussion, the Meeting decided to establish an open-ended drafting group, to be presided over by its Chairman, and two working groups, co-ordinated by its two Vice-Chairmen, the first to examine the principles relevant to the strategy and the second to consider the issue of costing action programmes. A small group was also set up to revise the two tables continued in the strategy prepared by the UNEP secretariat (UNEP(OCA)/WG.14/3 and Add.1).

13. The Meeting approved, as amended, the texts produced by the working groups and the recommendations for submission to the Preparatory Committee of UNCED prepared by the open-ended drafting group. It agreed to attach those texts to the report as Annex I.

V. CONCLUSIONS AND RECOMMENDATIONS

14. The Meeting decided to request the Executive Director of UNEP to transmit the text of the draft strategy it had prepared, as it appeared in Annex I to the report, to the Secretary-General of UNCED to be submitted to the Preparatory Committee of UNCED at its fourth session, for use in connection with Agenda 21.

VI. ADOPTION OF THE REPORT

15. The Meeting adopted its report.

VII. CLOSURE OF THE MEETING

16. Following an exchange of courtesies, the Chairman declared the Meeting closed.

Annex I

Draft strategy for the reduction of the degradation of the marine environment from land-based sources of pollution and activities in coastal areas

The Meeting recognized that the draft strategy prepared by the UNEP secretariat (UNEP(OCA)/WG.14/3 and Add.1) could be given only a preliminary review but agreed that it was a useful basis for future work.

In its preliminary review, the Meeting agreed that the strategy should involve a commitment by all States to prevent, reduce and control degradation of the marine environment from land-based sources of pollution and activities, so as to preserve its life support and productive capacities, and the principles, measures and approaches essential for meeting that commitment. The Meeting agreed that the principles, approaches and measures listed in Appendix 3, which had been taken from the draft strategy prepared for the Meeting (UNEP(OCA)/WG.14/3), were of particular importance.

The experts recognized the need for national, regional and global elements of the strategy.

While agreeing that particular problems in different countries and regions might require application of the strategy elements in different ways, the experts considered that complementary national, regional and global elements would include the following:

National

Adoption of a national action plan.

Adoption and enforcement of implementing legislation.

Allocation of the necessary resources.

Implementation of reduction measures including regulations and economic instruments.

Implementation of environmental impact assessment processes.

Collection and assessment of data and information from inventories, research, monitoring and evaluation of control measures.

Participation by all concerned groups in the planning and implementation process.

Regional

Adoption by States of regional action plans.

Establishment or strengthening of regional management frameworks including intergovernmental coordinating and consultative mechanisms, and assignment of institutional responsibilities for implementation.

Adoption of appropriate regional legal agreements or protocols.

Agreement on standards and goals for both emissions and environmental quality.

Development of appropriate regional centres of expertise for research, training and capacity building in support of national efforts.

Creation of regional mechanisms for information exchange, assessment, coordinated research and monitoring.

Global

Political commitment by all States at the highest possible level, possibly through a declaration at UNCED or by adoption as part of Agenda 21.

Consideration of a global strategy including objectives and a timetable for implementation, and including global mechanisms such as a legal agreement.

Agreement on basic principles based on the Montreal Guidelines.

Assignment of institutional responsibility for the implementation of the global strategy, including the coordination and stimulation of regional and national action.

Creation of facilities or mechanisms for financial support to the regional and national levels and for technology transfer.

Strengthening of mechanisms for information and data exchange, analysis and evaluation, and for supporting measures such as standard methods for systematic observation and quality control.

The Meeting agreed upon recommendations for inclusion in Agenda 21 which are set forth in Appendix 1.

Three additional matters in relation to the draft strategy were discussed. They were the tables on identifying priority contaminants, the annex on principles, approaches and measures and costing methodologies. The working group which examined the tables suggested the revised tables 1 and 2 in Appendix 2. The Meeting agreed with those revised tables.

With respect to Annex I of the draft strategy prepared by the UNEP secretariat, the Meeting agreed that the Montreal Guidelines constituted a good basis for future work on principles, approaches and measures. Meanwhile, a working group developed the indicative list of principles, approaches and measures in Appendix 3.

The Meeting accepted the working group's conclusion that, at the current stage, a detailed costing of either regional action programmes or of a global programme could not be made, due to lack of information. It was agreed that the working group's report should be made available to UNCED, so that the methodology would then be available as one of the mechanisms to assist in developing regional priorities for action.

There were many detailed activities which the strategy should include. Governments would no doubt have many before them, including as proposals for Agenda 21. The experts agreed that those would need to be elaborated and assigned priorities as national, regional and global strategies were further developed, for example in the proposed intergovernmental meeting after the 1992 United Nations Conference on the Environment and Development (UNCED).

The majority of the delegations agreed that Governments should review model codes-of-conduct, aimed at private sector entities considered by the United Nations Centre for Transnational Corporations (CTC) and the Economic Commission for Europe (ECE) and the International Chamber of Commerce, that provided ways and means of encouraging the prevention, reduction and control of marine degradation, including pollution by land-based sources, so as to lead to behaviour by private sector entities abroad as if they were in their home countries.

The Meeting was very conscious of the linkages between the marine degradation issue and other parts of Agenda 21, including, in particular:

Health,

Human settlements,

Freshwater resources,

Toxic chemicals,

Hazardous wastes,

Solid wastes,

Atmosphere, and the role of major groups, such as non-governmental organizations, trade unions and the business sector.

The Meeting agreed that the United Nations Conference on the Environment and Development should include clear recognition in Agenda 21 of the role of non-governmental organizations in developing and implementing environmental policies and programmes included in Agenda 21.

In view of the significance of costing issues, the Meeting asked a specialized working group to examine the question. Its report is to be found in Appendix 4. The Meeting agreed that the attention of UNCED should be drawn to paragraphs 7 and 8 of that report on the methodology of costing and determining priorities.

Annex I

Appendix 1

Recommendations of the intergovernmental meeting of experts on land-based sources of marine pollution

The Meeting of experts recommends that the following points be included in Agenda 21 to ensure that it incorporates a strategy to reduce degradation of the marine environment from land-based sources and activities in coastal areas:

Objectives:

States, in accordance with the relevant rights and obligations of the United Nations Convention on the Law of the Sea, commit themselves, according to their policies, priorities and resources, to prevent, reduce and control degradation of the marine environment from land-based sources of pollution and activities in coastal areas so as to preserve its life support and productive capacities. In carrying out this commitment, States agree to:

(a) Reduce as far as practicable, including from existing sources, the risk that human activities will cause irreversible damage to or long-term adverse effects upon, the marine environment;

(b) Ensure prior assessment of activities which may have potential significant adverse environmental impacts upon the marine environment, based on adequate information and data;

(c) Develop and implement integrated programmes for understanding and managing the coastal zone, including coastal ecosystems, and associated watersheds. These programmes should cover restoration of environmental quality degraded by land-based pollution and activities in coastal areas;

(d) Integrate protection of the marine environment into overall environmental, social and economic development policies;

(e) Develop economic incentives to limit industrial and agricultural practices that produce emissions, residues, or other by-products that contribute to the degradation of the marine environment; and

(f) Adopt policies consistent with internalization of environmental costs, such as the polluter pays principle, and with an anticipated and precautionary approach.

States agree that the provision[1] of additional financial resources, through appropriate international mechanisms, as well as access to cleaner technologies and relevant research, would be necessary to support action by developing countries to implement this commitment.

States further agree to elaborate a programme of action by the end of 1994 to implement this commitment. This programme of action should:

(a) Identify means of strengthening and extending regional cooperation;

(b) Identify elements that require cooperation at the global level;

(c) Include mechanisms for cooperation among States to provide advice and assistance, upon request, to States on the elaboration, adoption, development and implementation of legislation and standards; and

(d) Provide guidance and technologies to deal with the major types of pollution of the marine environment from land-based sources, according to the best scientific evidence.

Activities:

States, acting bilaterally, multilaterally, and within the framework of international organizations, should undertake the following steps in development and implementation of the programme of action:

(a) Adopt the programme of action at an intergovernmental meeting to be convened by UNEP, in cooperation with other relevant scientific, technical and financial organizations, after the United Nations Conference on the Environment and Development in June 1992;

(b) Assess the effectiveness of existing regional agreements and ensure that existing regional agreements and action plans relating to protection of the marine environment are consistent with the programme of action; and

(c) Initiate and promote the development of regional agreements, action plans and protocols in those regions where there is a need to adopt such instruments, as soon as possible after the proposed intergovernmental meeting.

In Flaborating the programme of action, States should:

(a) Build upon the Montreal Guidelines for the Protection of the Marine Environment from Land-Based Sources, updating and strengthening them as necessary; and

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[1] Many delegations insisted that the following text be included: "the transfer of technology should be done on preferential and non-commercial terms and new and additional funds should be provided, in particular to developing countries, in support of their action to implement the commitment", but there was absence of consensus. Therefore, further discussion on this issue was deferred for the fourth session of the Preparatory Committee of UNCED. It was recognized that the issue could not be resolved until negotiations on financial issues in UNCED had been completed.

(b) Draw upon the reports of the intergovernmental meetings of experts held in Halifax and Nairobi in May and December 1991 respectively.

Furthermore, States should ensure that the programme of action includes, inter alia, the following specific elements:

- Establishment of a global inventory and database providing information on the sources, types, amounts, and effects of pollutants reaching the marine environment from land-based sources and activities in coastal areas;

- Establishment of a clearing house on marine pollution control, information including processes and technologies to address marine pollution control and to support their transfer to developing countries and other countries with demonstrated needs;

- Provision of policy guidance to relevant global funding mechanisms;

- Establishment of financing arrangements through an existing multilateral funding regime or as a new fund, which could include exploration of the appropriateness of a revolving fund, to finance nationally adequate applications of sewage treatment technologies; and carry out other measures to meet the objectives of the programme of action;

- Guidelines for country reporting on the implementation of the programme of action;

- Necessary institutional arrangements; and

- Establishment of specific programmes to assure special attention to toxic, bio-accumulative, hazardous, or persistent compounds.

Annex I
Appendix 2
Tables

Table 1. LIST OF MAJOR POLLUTION ISSUES AND PRIORITY SUBSTANCES IN THE COASTAL MARINE ENVIRONMENT

The table below lists the major pollution issues and priority substances from land-based sources which constitute the greatest threat to the marine environment. Assignments under the heading "Status of science and management" relate to routine operations; they do not relate to catastrophic accidents.

Substances	Status of science and management targets	Effects
Sewage	Science adequate Management deficient	Human health Pathogens Eutrophication
Nutrients	Science limited Conservative management possible	Eutrophication Potential harmful algal blooms
Synthetic organic compounds	Science limited Conservative management possible	Human health Animal health
Sediment	Science limited Conservative management possible	Destruction of amenities (habitats/organisms) Decreased biological productivity
Litter	Science adequate Management deficient	Animal health Destruction of amenities
Metals	Science adequate Management deficient	Human health Animal health
Radionuclides	Science adequate Management deficient	Human health Animal health
Oil/ hydrocarbons	Science limited Management deficient	Animal health Destruction of amenities Decreased biological productivity Foodstuff taint
PAHs*	Science limited Management deficient	Human health Animal health Foodstuff taint

* combustion processes, industry, diffuse sources

Although all the substances listed in table 1 represent threats to the marine environment, four represent the greatest concern on a global scale. These are not necessarily in order of priority, sewage, nutrients, synthetic organic compounds and sediments.

This table is not exhaustive regarding pollution threats to the marine environment from land-based sources. Regionally and locally, other issues may predominate; i.e. inorganic compounds and other chemicals, thermal outfalls, tar balls, etc.

/...

Table 2. Globally significant contaminants/activities targeted for concerted international action

Technical and scientific assessment			Main options for actions/remedies				
Contaminant	Source/activity	Effects and targets	Policy recommendations and options	Financial and economic implications	Action/ conclusion	Life quality implications	
						Expected Results	Lost Opportunities
Sewage	Human settlements; tourism	Human health/ food quality; bathing water quality; biological production; ecosystem water quality; fisheries	Treatment; proper outfalls; integrated sanitation systems; water recycling	Water prices; user fees; national and private budgets; loans and grants; regional and national plans	Land use planning, technology transfer, science and technical assistance; international fund	Improved health food and recreation, increased revenues; health/ social problems	Tourism losses, seafood quality, epidemics (cholera); recreational amenities
Nutrients (nitrate, phosphate)	Agriculture; natural and artificial fertilizing; sewage; certain industries; ground water	Human health; biological production (eutrophication); harmful algal blooms; fish kills; water quality; fisheries	Change education and management practices, regulatory and pricing policies; investments	Food and fertilizer prices; subsidies; economic incentives; loans and grants; national budgets	Adjustment of agricultural practices and policies; sewage control	Improved and proper water conditions; improved food and human health; improved groundwater	Tourism losses; human health costs increase, ground water contamination; recreation; coral reef destruction
Synthetic organics, pesticides	Industry; commerce; agriculture	Ecosystem health; marine mammals; fisheries	Substitutes; selected bans; clean production; new processes and technologies	User fees and charges; violation charges; industrial closing; health care	Review practices and education; waste reduction (minimisation)	Improved marine products and environmental quality	Tourism, recreation; food quality
Sediment	Soil erosion; dredging; river runoff; sewage; industrial wastes; mining; fallout from organic production	Ecosystems (coral reefs, mangroves) estuaries; habitat destruction; water quality	Review of land use practices; dredging and disposal regulations; afforestation	User fees; aid and loans; national budgets	Change land-use practices and patterns; land production; integrated coastal zone management	Decreased soil erosion; improved water quality; protection of coral reefs	Land use; food production; coral reef destruction, loss of tourism, loss of habitats

Table 2. (continued)

Technical and scientific assessment			Main options for actions/remedies				
						Life quality implications	
Substance/issue	Source/activity	Effects and targets	Policy recommendations and options	Financial and economic implications	Action/ conclusions	Expected Results	Lost Opportunities
Litter*	Human activity	Reduction of amenities, Animal killing	Treatment systems, Regulatory activities	Fines/producer fee/consumer fee, improve collection and disposal	Prohibition/public awareness campaigns, Reduction of production of litter	Higher quality amenities, increased environmental quality	Tourism losses, losses of organisms
Metals*	Industry, Mining, Sewage, Products	Human health, Animal health	Substitutions, Discharge limit, selected bans, clean production, clean-up of Mining sites, Sewage treatment	User fees and charges, violation charges, Industry closing	Discharge Permits, clean technology, waste minimization, waste segregation	Improved marine products and environmental quality	Closing of sea-food harvesting areas, reduced environmental quality
Radionuclides	Nuclear installations, Nuclear weapons, Industry, Public Services (Hospitals/Universities) Contaminants	Human health, Animal health	Application of best available technology, International controls	User fees, waste fees	Strict controls	Reduced threats, Reduced cancer and other nuclear diseases	Closing down of beaches, fishing grounds, seafood, harvesting areas
Oil/hydrocarbons	Offshore Production, Refineries/oil terminals, Reception facilities (Ships); diffuse sources; industry	Reduction of amenities, Ecosystem effects, tainting	Effluent treatment, application of technology	Increased oil prices	Review practices, waste reduction, discharge permits	Improved amenities	Loss of coastal habitats, loss in tourism
PAH	Industry, Burning of fossil fuel, diffuse sources	Human and animal health, tainting	Effluent treatment, More research needed	Investments by industry	Clean technology, effluent treatment, selected bans	Improve marine products	Less food

* When applicable.

Annex I

Appendix 3

Text submitted by the working group on principles

Priority list of principles, approaches and measures which could be considered as applicable in the context of a global strategy and programme of action.

General

1. Sustainable development.

Management

2. Integrated coastal zone planning and management.

3. Recycling and re-use of reclaimable fractions of wastes.

4. Avoidance of non-recycable and non-reusable materials.

5. Application of preventive measures.

6. Application of the precautionary approach.

7. Avoidance of transfer of polluting processes to other countries or geographic regions.

8. Avoidance of transfer of pollutants from one medium to another (in accordance with Montreal Guideline No.6).

[9. Consideration of the best practicable environmental options for the release of non-reclaimable waste before discharging into the marine or estuary environment.]

[10. Monitoring and periodic review of the effectiveness of the control measures, and their revision if necessary.]

[11. Contingency preparedness for pollution emergencies.]

Social

[12. Maintenance and improvement of the economic status and quality of life of disadvantaged coastal populations, or realistic compensation for change caused to their well-being and livelihood.]

13. Public information and awareness; [full and open access to information.]

[14. Public participation in decision making.]

15. Educational programmes to include considerations for the protection of the marine environment and the need for sustainable development.

Technical and Technological

16. Setting of environmental quality objectives.

17. Achievement of emissions standards through the use of the best available technology.

18. Setting of maximum allowable pollution loads.

19. Environmentally critical pollutants (particularly bio-accumulative, toxic and/or persistent) require special attention in standard setting with a view to ultimately phasing out their emissions to the environment.

20. Transfer of best available technologies, in particular to developing countries.

Scientific

21. International scientific cooperation.

22. Systematic observation of the environmental quality, including the identification of the relationship between the sources of contaminants and observed effects.

23. Use of appropriate independent scientific organizations.

Economic and fiscal

24. Polluter pays principle.

25. Use of economic incentives.

26. Pricing policy, including economic valuation of natural resources.

27. Establishment of financing arrangements through an existing multilateral funding regime or as a new fund, which could include exploration of the appropriateness of a revolving fund, to finance national adequate applications of sewage treatment technologies; and carry out other measures to meet the objectives of the programme of action.

Organizational

28. International cooperation particularly on regional level.

29. Establishment of strong national structures and intersectoral coordination mechanisms or strengthening the existing ones.

[30. Development of appropriate infrastructure and adequate manpower.]

31. Exchange of experience, data and information.

32. Periodic country reports.

Annex I

Appendix 4

Report of working group on costing action programmes

1. The working group considered the following documents:

(i) Preliminary study on the costs and benefits of measures for the reduction of degradation of the environment from land-based sources of pollution and activities in coastal areas of the Bay of Izmir (UNEP(OCA)/WG.14/Inf.8);

(ii) Preliminary study on the costs and benefits of measures for the reduction of the degradation of the environment from land-based sources of pollution and activities in coastal areas of the island of Rhodes (UNEP(OCA)/WG.14/Inf.9); and

(iii) Report of the ad hoc consultation on land-based sources of pollution (Athens, 5-6 November 1991) (UNEP(OCA)/WG.14/Inf.10).

2. Consultants described the methodology used for the cost-benefit studies and presented their main findings relating to the Bay of Izmir and the Island of Rhodes. In doing so, they stressed that the studies had been completed quickly and would require further work to fulfil the request of UNEP regarding such case studies (ref: experts' meeting October 1991). The preliminary assessment for the Bay of Izmir suggested that the benefits of action outweighed the costs of control measures by a factor of 3 to 7. Similarly for Rhodes, the annual return on investment was shown to outweigh the costs by a factor of at least three.

3. In the subsequent working group discussion, the following points were made:

(i) Cost-benefit-analyses of localized remedial action can be highly informative and could lead to appropriate investment decisions, even in the current absence of adequate methods that allow social or quality of life benefits to be quantified;

(ii) Regional programmes should develop priorities, with identified costs and targets as necessary, to combat the most serious problems. Implementation of priorities identified requires high-level political and financial commitment and participation;

(iii) Reliable costing of implementation strategies, particularly at the national level, will only be possible when the causes of degradation and the means to control them are clearly identified. Concerning the studies tabled, even with their incomplete analyses, it was apparent that the benefits of protecting the coastal environment far exceed the costs;

(iv) Further case studies with improved methodologies would be useful if they included an identification of potential sources of income, obtained through economic activity or environmental improvement resulting from the planned action programme, to finance its costs;

(v) Methodologies need to be developed to evaluate, in non-monetary terms, costs and benefits related to sustainable development and quality of life indicators (such as improved infant mortality rates, life expectancy and literacy), that are particularly suitable for devloping countries where populations are largely outside the monetary economy; and

(vi) Revolving funds, given the evidence of the two case studies, can play a valuable role. These funds should be structured so that non-monetary issues are taken into account, through mechanisms such as the conversion of non-monetary benefits into monetary terms or through subsidies.

4. The working group did not make a detailed costing of either regional action programmes or of a global programme due to the absence of adequate information and time constraints. The working group did discuss a methodology for costing action programmes.

5. The working group emphasized that costing analyses must be an integral part of every regional action programme and should be updated and reviewed periodically.

6. The working group agreed on the merit of costing projects of a high priority programme of action, regionally agreed upon at a high political level, with the participation of global, regional and national financing institutions carrying out the pre-feasibility studies as well as the involvement of the corporate sector.

7. The working group recommends that the methodology below be used for costing regional programmes and local studies:

(a) A general description of the study area, providing basic information on the status of the natural resources of the area, demographic trends, land and sea use practices, economic development indicators, etc.;

(b) An analysis of land-based sources of pollution and activities in coastal areas contributing to the degradation of the marine and coastal terrestial environment, including:

- An inventory of coastal point and non-point sources and activities;
- An estimate of the type and amount of pollutants reaching the environment from coastal land-based sources and activities either through direct discharges or indirectly through atmospheric or riverine transport;
- An estimate of the ecological and human health related impact of the sources and activities;

(c) An analysis of the actual and potential social and economic costs of pollution from land-based sources and activities in coastal areas, expressed in monetary terms; indirect impacts due to loss, depletion or depreciation of natural resources or their quality, or due to effect on human health, should also be accounted for;

(d) An analysis of the costs and associated benefits, expressed in monetary terms, from measures which have been introduced to control pollution from land-based sources or activities in coastal areas;

(e) An analysis of costs and benefits of additional measures (legal, administrative, economic, fiscal, technological, institutional) which would have to be introduced in order to protect the marine and coastal areas and ensure their sustainable development and use; and

(f) An evaluation of costs and benefits in non-monetary terms, related to sustainable development and the quality of life of populations, including those largely outside the monetary economy.

8. The working group recommends that the above costing methodology be included in the report of the Meeting to the Preparatory Committee for UNCED and the post-UNCED meeting [to ensure the implementation of the land-based sources of marine pollution component of Agenda 21].